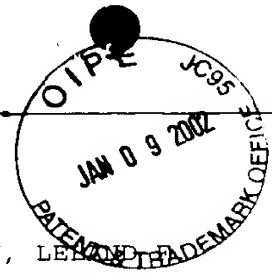


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SEQUENCE LISTING

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AND AGONISTS THEREOF

<130> 9050-0013.24

<140> 09/929,818  
<141> 2001-08-13

<150> 09/498,522  
<151> 2000-02-04

<150> 09/181,316  
<151> 1998-10-27

<150> 08/959,064  
<151> 1997-10-28

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<223> Nle

<400> 52  
His Ser Asp Ala Val Phe Thr Asp Asn Phe Thr Lys Leu Arg Lys Gln  
1 5 10 15

Xaa Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr  
20 25

<210> 53  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

A5  
A cont.

70  
22

<220>  
<221> MOD\_RES  
<222> (10)  
<223> O-CH3-Tyr

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle

<400> 53  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15

Xaa Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr  
20 25

<210> 54  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle

<220>  
<221> MOD\_RES  
<222> (22)  
<223> m-F-Tyr

<400> 54  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15

Xaa Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr  
20 25

<210> 55  
<211> 31  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle

71  
23

A5 cont.

<400> 55

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15

Xaa Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr Gly Gly Met  
20 25 30

<210> 56

<211> 31

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>

<221> MOD\_RES

<222> (17)

<223> Nle

<220>

<221> MOD\_RES

<222> (31)

<223> Cys(Acm)

<400> 56

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15

Xaa Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr Gly Gly Cys  
20 25 30

<210> 57

<211> 31

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>

<221> MOD\_RES

<222> (17)

<223> Nle

<400> 57

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15

Xaa Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr Gly Gly Thr  
20 25 30

72  
~~24~~

A5 cont.

<210> 58  
<211> 31  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle

<400> 58  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15  
Xaa Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr Ala Ala Met  
20 25 30

<210> 59  
<211> 31  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle

<400> 59  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15  
Xaa Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr Ala Ala Ala  
20 25 30

<210> 60  
<211> 30  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle



72  
25

<400> 60

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15

Xaa Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr Gly Lys  
20 25 30

<210> 61

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>

<221> MOD\_RES

<222> (17)

<223> Nle

<400> 61

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15

Xaa Ala Ala Lys Lys Tyr Leu Asn Ser Val Leu Thr  
20 25

<210> 62

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>

<221> MOD\_RES

<222> (10)

<223> 2-Nal

<400> 62

His Ser Asp Ala Val Phe Thr Asp Asn Xaa Thr Lys Leu Arg Lys Gln  
1 5 10 15

Ala Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr  
20 25

<210> 63

<211> 31

<212> PRT

<213> Artificial Sequence

73  
~~26~~

A5  
Acet.

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>

<221> MOD\_RES

<222> (17)

<223> Nle

<400> 63

His	Ser	Asp	Ala	Val	Phe	Thr	Glu	Asn	Tyr	Thr	Lys	Leu	Arg	Lys	Gln
1				5					10					15	

Xaa	Ala	Val	Lys	Lys	Tyr	Leu	Asn	Ser	Val	Leu	Thr	Ala	Ala	Met
			20					25					30	

<210> 64

<211> 31

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>

<221> MOD\_RES

<222> (17)

<223> Nle

<220>

<221> MOD\_RES

<222> (29)

<223> Unknown amino acid

<220>

<221> MOD\_RES

<222> (30)

<223> Unknown amino acid

<400> 64

His	Ser	Asp	Ala	Val	Phe	Thr	Glu	Asn	Tyr	Thr	Lys	Leu	Arg	Lys	Gln
1				5					10					15	

Xaa	Ala	Val	Lys	Lys	Tyr	Leu	Asn	Ser	Val	Leu	Thr	Xaa	Xaa	Phe
			20					25					30	

<210> 65

<211> 31

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

74  
21

A<sup>2</sup> cont.

<220>  
<221> MOD\_RES  
<222> (6)  
<223> p-F-Phe

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle

<220>  
<221> MOD\_RES  
<222> (31)  
<223> Cys (Acm)

<400> 65  
His Ser Asp Ala Val Phe Thr Glu Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15

Xaa Ala Ala Lys Lys Tyr Leu Asn Ser Val Leu Thr Gly Gly Cys  
20 25 30

<210> 66  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (6)  
<223> p-F-Phe

<220>  
<221> MOD\_RES  
<222> (10)  
<223> p=NH<sub>2</sub>-Phe

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle

<400> 66  
His Ser Asp Ala Val Phe Thr Asp Asn Phe Thr Lys Leu Arg Lys Gln  
1 5 10 15

Xaa Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr  
20 25

<210> 67  
<211> 31

75  
28

AS-Cont.

<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (31)  
<223> Cys (Acm)

<400> 67  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15  
Ala Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr Gly Gly Cys  
20 25 30

<210> 68  
<211> 31  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle

<400> 68  
His Ser Asp Ala Val Phe Thr Glu Asn Tyr Thr Lys Leu Lys Lys Gln  
1 5 10 15  
Xaa Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr Gly Gly Met  
20 25 30

<210> 69  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (10)  
<223> p-NH2-Phe

<220>  
<221> MOD\_RES

76  
29

AS  
cont.

<222> (17)

<223> Nle

<400> 69

His Ser Asp Ala Val Phe Thr Asp Asn Phe Thr Lys Leu Arg Lys Gln  
1 5 10 15

Xaa Ala Ala Lys Lys Tyr Leu Asn Ser Val Leu Thr  
20 25

<210> 70

<211> 31

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>

<221> MOD\_RES

<222> (6)

<223> p-F-Phe

<220>

<221> MOD\_RES

<222> (17)

<223> Nle

<220>

<221> MOD\_RES

<222> (31)

<223> Cys (Acm)

<400> 70

His Ser Asp Ala Val Phe Thr Glu Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15

Xaa Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr Gly Gly Cys  
20 25 30

<210> 71

<211> 31

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 71

His Ser Asp Ala Val Phe Thr Glu Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15

Ala Ala Ala Lys Lys Tyr Leu Asn Ser Val Leu Thr Gly Gly Met  
20 25 30

77  
~~30~~

A5 cont.

<210> 72  
<211> 31  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle

<400> 72  
His Ser Asp Ala Val Phe Thr Glu Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15

Xaa Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr Gly Gly Ala  
20 25 30

<210> 73  
<211> 31  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle

<400> 73  
His Ser Asp Ala Val Phe Thr Glu Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15

Xaa Ala Ala Lys Lys Tyr Leu Asn Ser Val Leu Thr Gly Gly Met  
20 25 30

<210> 74  
<211> 31  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES

78  
~~31~~

<222> (6)  
<223> p-F-Phe

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle

<220>  
<221> MOD\_RES  
<222> (31)  
<223> Cys(Acm)

<400> 74  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15

Xaa Ala Ala Lys Lys Tyr Leu Asn Ser Val Leu Thr Gly Gly Cys  
20 25 30

<210> 75  
<211> 31  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle

<400> 75  
His Ser Asp Ala Val Phe Thr Glu Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15

Xaa Ala Ala Lys Lys Tyr Leu Asn Ser Val Leu Thr Gly Gly Ser  
20 25 30

<210> 76  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (6)  
<223> p-F-Phe

A5 cont.

79  
~~32~~

AS  
Acont.

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle

<400> 76  
His Ser Asp Ala Val Phe Thr Glu Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15  
Xaa Ala Ala Lys Lys Tyr Leu Asn Ser Val Leu Thr  
20 25

<210> 77  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (12)  
<223> Orn

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle

<400> 77  
His Ser Asp Ala Val Phe Thr Glu Asn Tyr Thr Xaa Leu Arg Lys Gln  
1 5 10 15  
Xaa Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr  
20 25

<210> 78  
<211> 31  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle

<400> 78  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15



80  
~~33~~

5  
A cont.

Xaa Ala Val Lys Lys Tyr Leu Asn Ala Leu Lys Lys Gly Gly Thr  
20 25 30

<210> 79  
<211> 31  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle

<400> 79  
His Ser Asp Ala Val Phe Thr Glu Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15

Xaa Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr Ala Ala Ala  
20 25 30

<210> 80  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 80  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15

Ala Ala Ala Lys Lys Tyr Leu Asn Ser Val Leu Thr  
20 25

<210> 81  
<211> 30  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle

81  
~~34~~

A5 cont.

<400> 81

His Ser Asp Ala Val Phe Thr Glu Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15

Xaa Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr Gly Lys  
20 25 30

<210> 82

<211> 31

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>

<221> MOD\_RES

<222> (10)

<223> p-NH2-Phe

<220>

<221> MOD\_RES

<222> (17)

<223> Nle

<220>

<221> MOD\_RES

<222> (31)

<223> Cys (Acm)

<400> 82

His Ser Asp Ala Val Phe Thr Asp Asn Phe Thr Lys Leu Arg Lys Gln  
1 5 10 15

Xaa Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr Gly Gly Cys  
20 25 30

<210> 83

<211> 31

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>

<221> MOD\_RES

<222> (17)

<223> Nle

<220>

<221> MOD\_RES

<222> (31)

<223> Cys (Acm)

82  
35

AS cont.

<400> 83

His Ser Asp Ala Val Phe Thr Glu Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15

Xaa Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr Gly Gly Cys  
20 25 30

<210> 84

<211> 31

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>

<221> MOD\_RES

<222> (17)

<223> Nle

<400> 84

His Ser Asp Ala Val Phe Thr Glu Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15

Xaa Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr Gly Gly Met  
20 25 30

<210> 85

<211> 27

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>

<221> MOD\_RES

<222> (17)

<223> Nle

<400> 85

Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Lys Leu Arg Lys Gln Xaa  
1 5 10 15

Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr  
20 25

<210> 86

<211> 27

<212> PRT

<213> Artificial Sequence

83  
~~36~~

AS cont.

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog  
  
<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle  
  
<400> 86  
Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Lys Leu Arg Lys Gln Xaa  
1 5 10 15  
  
Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr  
20 25

<210> 87  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (1)  
<223> N-CH3-Ala

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle

<400> 87  
Ala Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15  
  
Xaa Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr  
20 25

<210> 88  
<211> 31  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (12)  
<223> Orn

84  
35

A5  
Cont.

<220>  
<221> MOD\_RES  
<222> (31)  
<223> Cys (Acm)

<400> 88  
His Ser Asp Ala Leu Phe Thr Asp Asn Tyr Thr Xaa Leu Arg Lys Gln  
1 5 10 15  
Ala Ala Ala Lys Lys Tyr Leu Asn Thr Val Leu Thr Gly Gly Cys  
20 25 30

<210> 89  
<211> 31  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (6)  
<223> p-F-Phe

<220>  
<221> MOD\_RES  
<222> (10)  
<223> 2-Nal

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle

<400> 89  
His Ser Asp Ala Val Phe Thr Asp Asn Xaa Thr Lys Leu Arg Lys Gln  
1 5 10 15  
Xaa Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr Gly Gly Met  
20 25 30

<210> 90  
<211> 31  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (6)  
<223> p-F-Phe

AS cont.

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle

<220>  
<221> MOD\_RES  
<222> (31)  
<223> Cys (Acm)

<400> 90  
His Ser Asp Ala Val Phe Thr Glu Asn Tyr Thr Lys Leu Lys Lys Gln  
1 5 10 15

Xaa Ala Ala Lys Lys Tyr Leu Asn Ser Val Leu Thr Gly Gly Cys  
20 25 30

<210> 91  
<211> 31  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (6)  
<223> p-F-Phe

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle

<220>  
<221> MOD\_RES  
<222> (31)  
<223> Cys (Acm)

<400> 91  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15

Xaa Ala Ala Lys Lys Tyr Leu Asn Ser Val Leu Thr Gly Gly Cys  
20 25 30

<210> 92  
<211> 31  
<212> PRT  
<213> Artificial Sequence

86  
39

A5 cont.

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (12)  
<223> Orn

<220>  
<221> MOD\_RES  
<222> (31)  
<223> Cys (Acm)

<400> 92  
His Ser Asp Ala Leu Phe Thr Asp Asn Tyr Thr Xaa Leu Arg Lys Gln  
1 5 10 15  
Ala Ala Val Lys Lys Tyr Leu Asn Thr Val Leu Thr Gly Gly Cys  
20 25 30

<210> 93  
<211> 31  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (6)  
<223> p-F-Phe

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle

<220>  
<221> MOD\_RES  
<222> (31)  
<223> Cys (Acm)

<400> 93  
His Ser Asp Ala Val Phe Thr Glu Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15  
Xaa Ala Ala Lys Lys Tyr Leu Asn Ser Val Leu Thr Gly Gly Cys  
20 25 30

<210> 94  
<211> 28  
<212> PRT  
<213> Artificial Sequence

87  
40

A5.  
Acont.

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (1)  
<223> N-Me-Ala

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle

<400> 94  
Ala Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15  
Xaa Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr  
20 25

<210> 95  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (6)  
<223> p-F-Phe

<220>  
<221> MOD\_RES  
<222> (10)  
<223> p-NH2-Phe

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle

<400> 95  
His Ser Asp Ala Val Phe Thr Asp Asn Phe Thr Lys Leu Arg Lys Gln  
1 5 10 15  
Xaa Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr  
20 25

<210> 96  
<211> 31



<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle

<400> 96  
His Ser Asp Ala Val Phe Thr Glu Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15

Xaa Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr Gly Gly Met  
20 25 30

<210> 97  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (10)  
<223> p-NH2-Phe

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle

<400> 97  
His Ser Asp Ala Val Phe Thr Asp Asn Phe Thr Lys Leu Arg Lys Gln  
1 5 10 15

Xaa Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr  
20 25

<210> 98  
<211> 31  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES

89  
~~42~~

75-  
cont.

<222> (17)  
<223> Nle

<220>  
<221> MOD\_RES  
<222> (31)  
<223> Cys (Acm)

<400> 98  
His Ser Asp Ala Val Phe Thr Glu Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15

Xaa Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Thr Gly Gly Cys  
20 25 30

<210> 99  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle.sup.

<400> 99  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Xaa Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 100  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle.sup.

<400> 100  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Xaa Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

90  
~~45~~

A5 cont.

<210> 101  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 101

His Ser Asp Ala Val Tyr Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 102

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 102

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Phe Leu Asn Ser Ile Leu Asn  
20 25

<210> 103

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 103

His Ser Asp Ala Val Phe Ser Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 104

<211> 28

<212> PRT

<213> Artificial Sequence

91  
44

AS. cont.

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 104

His Ser Asp Ala Val Phe Lys Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 105

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 105

His Ser Asp Ala Val Phe Gln Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 106

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 106

His Ser Asp Ala Val Phe Asn Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 107

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 107

His Ser Asp Ala Val Phe Arg Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

92  
~~45~~

A5  
Acont.

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 108  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 108  
His Ser Asp Ala Val Phe Thr Asp Arg Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 109  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 109  
His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 110  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 110  
His Ser Asp Ala Val Phe Thr Asp Lys Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 111  
<211> 28

A5 cont.

<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 111  
His Ser Asp Ala Val Phe Thr Asp Leu Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 112  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 112  
His Ser Asp Ala Val Phe Thr Asp Ser Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 113  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 113  
His Ser Asp Ala Val Phe Thr Asp Thr Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 114  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

94  
A1

Accont.

<400> 114

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Leu Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 115

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 115

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Lys Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 116

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 116

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Asn Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 117

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 117

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Gln Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

A5 cont.

<210> 118  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 118  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Arg Arg Leu Arg Lys Gln  
1 5 10 15  
Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 119  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 119  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Thr  
1 5 10 15  
Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 120  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 120  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Ser  
1 5 10 15  
Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 121  
<211> 28  
<212> PRT  
<213> Artificial Sequence



96  
~~49~~

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 121

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Leu  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 122

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 122

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Lys  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 123

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 123

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Asn  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 124

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 124

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Arg  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

As cont.

<210> 125  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 125  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Arg Ser Ile Leu Asn  
20 25

<210> 126  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 126  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Gln Ser Ile Leu Asn  
20 25

<210> 127  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 127  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Lys Ser Ile Leu Asn  
20 25

<210> 128  
<211> 28

<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 128  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15  
Met Ala Val Lys Lys Tyr Leu Leu Ser Ile Leu Asn  
20 25

<210> 129  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 129  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15  
Met Ala Val Lys Lys Tyr Leu Ser Ser Ile Leu Asn  
20 25

<210> 130  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 130  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Ser Leu Arg Lys Gln  
1 5 10 15  
Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 131  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

99  
52

<400> 131

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Ser Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 132

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>

<221> MOD\_RES

<222> (20)

<223> Orn

<400> 132

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Xaa Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 133

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 133

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Arg Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 134

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

100  
53

<400> 134

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Phe Asn Ser Ile Leu Asn  
20 25

<210> 135

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 135

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Phe Leu Asn  
20 25

<210> 136

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 136

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Tyr Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 137

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 137

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Tyr Asn Ser Ile Leu Asn  
20 25

5  
A cont.

101  
84

5  
Acont.  
<210> 138  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 138  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15  
Met Ala Val Lys Lys Tyr Leu Asn Ser Tyr Leu Asn  
20 25

<210> 139  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 139  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15  
Met Ala Val Lys Lys Tyr Leu Asn Ser Leu Leu Asn  
20 25

<210> 140  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 140  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Ile Arg Lys Gln  
1 5 10 15  
Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 141  
<211> 28  
<212> PRT  
<213> Artificial Sequence

102  
55

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 141

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Ile Asn Ser Ile Leu Asn  
20 25

<210> 142

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 142

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Val Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 143

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 143

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Val Asn Ser Ile Leu Asn  
20 25

<210> 144

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>

<221> MOD\_RES

75 cont.

103  
~~56~~

<222> (13)  
<223> Nle

Accont.

<400> 144  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Xaa Arg Lys Gln  
1 5 10 15  
Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 145  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (23)  
<223> Nle

<400> 145  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15  
Met Ala Val Lys Lys Tyr Xaa Asn Ser Ile Leu Asn  
20 25

<210> 146  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (26)  
<223> Nle

<400> 146  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15  
Met Ala Val Lys Lys Tyr Leu Asn Ser Xaa Leu Asn  
20 25

<210> 147  
<211> 28



104  
ST

<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 147  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15  
Met Ala Val Lys Arg Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 148  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 148  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Leu Lys Gln  
1 5 10 15  
Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 149  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 149  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15  
Met Ala Val Lys Leu Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 150  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

105  
~~58~~

<220>  
<221> MOD\_RES  
<222> (14)  
<223> Orn

A5  
Aant.

<400> 150  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Xaa Lys Gln  
1 5 10 15  
Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 151  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (21)  
<223> Orn

<400> 151  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15  
Met Ala Val Lys Xaa Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 152  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (14)  
<223> Nle

<400> 152  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Xaa Lys Gln  
1 5 10 15  
Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

106  
59

A5.1

<210> 153  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (21)  
<223> Nle

<400> 153  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15  
Met Ala Val Lys Xaa Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 154  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 154  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Arg Gln  
1 5 10 15  
Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 155  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 155  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Ser Gln  
1 5 10 15  
Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 156  
<211> 28

107  
~~60~~

AS  
Acont.

<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 156  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Gln Gln  
1 5 10 15  
Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 157  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (15)  
<223> Orn

<400> 157  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Xaa Gln  
1 5 10 15  
Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 158  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 158  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15  
Met Ala Met Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 159  
<211> 28  
<212> PRT  
<213> Artificial Sequence

108  
61

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 159

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Leu Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 160

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 160

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Leu Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 161

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 161

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Val Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 162

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

A5  
Acent.

109  
~~62~~

<400> 162  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Lys Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 163  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 163  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Lys Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 164  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 164  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Ile Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 165  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 165  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Ile Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

A5 cont.

110  
63

5-  
Acont.

<210> 166  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>  
<221> MOD\_RES  
<222> (19)  
<223> Nle

<400> 166  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Xaa Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 167  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 167  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Leu Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 168  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 168  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Asn Ile Leu Asn  
20 25

111  
64

<210> 169  
<211> 28  
<212> PRT  
<213> Artificial Sequence

5  
Acont.

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 169  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15  
Met Ala Val Lys Lys Tyr Leu Asn Leu Ile Leu Asn  
20 25

<210> 170  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 170  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15  
Met Ala Val Lys Lys Tyr Leu Asn Gln Ile Leu Asn  
20 25

<210> 171  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 171  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15  
Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Val Asn  
20 25

<210> 172  
<211> 28  
<212> PRT  
<213> Artificial Sequence



112  
65

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 172

His Ser Phe Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 173

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 173

His Ser Tyr Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 174

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 174

His Ser Asp Ala Val Phe Phe Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 175

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 175

His Ser Asp Ala Val Phe Tyr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

113  
~~66~~

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

*AS cont.*  
<210> 176  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 176  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Phe Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 177  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 177  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Tyr Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 178  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 178  
His Ser Asp Thr Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 179  
<211> 28

114  
67

AS cont.

<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 179  
His Ser Asp Ser Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15  
Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 180  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 180  
His Ser Asp Asn Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15  
Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 181  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 181  
His Ser Asp Gln Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15  
Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 182  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

115  
~~68~~

<400> 182

His Ser Asp Ala Val Thr Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 183

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 183

His Ser Asp Ala Val Ser Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 184

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 184

His Ser Asp Ala Val Asn Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 185

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 185

His Ser Asp Ala Val Gln Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

A<sup>5</sup> cont.

116  
~~69~~

<210> 186  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 186  
His Ser Asp Ala Val Ala Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 187  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 187  
His Ser Asp Ala Val Phe Thr Thr Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 188  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 188  
His Ser Asp Ala Val Phe Thr Ser Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 189  
<211> 28  
<212> PRT  
<213> Artificial Sequence

117  
20

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 189

His Ser Asp Ala Val Phe Thr Asn Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 190

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 190

His Ser Asp Ala Val Phe Thr Gln Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 191

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 191

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Ser  
20 25

<210> 192

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 192

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

118  
71

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Gln  
20 25

*A5 cont.*  
<210> 193  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 193  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Gln Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 194  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 194  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Gln Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 195  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 195  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Ser Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 196  
<211> 28

119  
72

<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 196  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Gln Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 197  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 197  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Met Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 198  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 198  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Ile Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn  
20 25

<210> 199  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

AS  
Acont.



120  
73

<400> 199

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Met Asn Ser Ile Leu Asn  
20 25

<210> 200

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 200

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Met Leu Asn  
20 25

<210> 201

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 201

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Thr  
20 25

<210> 202

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VIP  
analog

<220>

<221> MOD\_RES

<222> (17)

<223> Nle

AS  
Acid.

121  
74

<400> 202  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15

*As. Cont.*  
Xaa Ala Val Lys Lys Tyr Leu Asn Ser Ala Ala Thr  
20 25

<210> 203  
<211> 30  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 203  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn Gly Cys  
20 25 30

<210> 204  
<211> 30  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 204  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn Gly Cys  
20 25 30

<210> 205  
<211> 30  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analog

<400> 205  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln  
1 5 10 15

Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn Gly Cys  
20 25 30

122  
75

75  
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<210> 206  
<211> 4  
<212> PRT  
<213> Unknown Organism

<220>  
<223> Description of Unknown Organism: Melanocortin  
peptide

<400> 206  
His Phe Arg Trp  
1

<210> 207  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic VIP  
analogs

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Nle

<400> 207  
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Lys Leu Arg Lys Gln  
1 5 10 15

Xaa Ala Val Lys Lys Tyr Leu Asn Ser Val Leu Ala  
20 25

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